

What Is Claimed Is:

1. A head suspension or head suspension component for use in supporting a read/write head in a storage device, the head suspension or head suspension component comprising an integrated circuit chip as a structural
5 element of the head suspension or head suspension component.

2. The head suspension or head suspension component of claim 1, wherein the chip is an electrical element of the head suspension or head suspension component.

3. The head suspension or head suspension component of claim 2, wherein the chip is electrically connected between the read/write head and externally located electrical components.
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4. The head suspension or head suspension component of claims 1, further comprising a load beam that includes the chip.

5. The head suspension or head suspension component of claim 4, wherein the load beam comprises a first portion and a second portion, with the first portion coupled to one end of the chip and the second portion coupled to an opposite end of the chip.
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6. The head suspension or head suspension component of claim 5, wherein the first portion comprises a mounting region and a spring region.
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7. The head suspension or head suspension component of claim 6, wherein the spring region includes an aperture.

8. The head suspension or head suspension component of claims 6, wherein the spring region includes a radiused bend.

9. The head suspension or head suspension component of claims 5, wherein the second portion of the load beam comprises a flexure attachment region.

5 10. The head suspension or head suspension component of claim 9, further comprising a flexure and wherein the flexure mounts to the flexure attachment region of the second portion.

11. The head suspension or head suspension component of claim 4, further comprising a flexure and wherein the flexure mounts to the chip.

10 12. The head suspension or head suspension component of claim 1, further comprising at least one electrical trace.

13. The head suspension or head suspension component of claim 12, wherein the trace comprises a first portion and a second portion, the first portion electrically connected between an externally located electrical component and the chip, and the second portion electrically connected between
15 the read/write head and the chip.

14. The head suspension or head suspension component of claim 1, wherein the chip comprises a gimballing dimple.

15. The head suspension or head suspension component of claim 1, wherein the chip contacts a gimballing dimple.

20 16. The head suspension or head suspension component of claim 1, wherein the chip comprises a head lift limiter.

17. The head suspension or head suspension component of claim 1, wherein the chip is a stiffening member for the head suspension or head suspension component.

18. The head suspension or head suspension component of claim 1, wherein the chip comprises a shape configured to enhance the performance of the head suspension or head suspension component.

5 19. The head suspension or head suspension component of claim 18, wherein the shape comprises a cross-sectional profile configured to reduce vibration of the head suspension or head suspension component.

20. The head suspension or head suspension component of claim 18, wherein the shape comprises a cross-section profile configured to reduce wind drag of the head suspension or head suspension component.

10 21. The head suspension or head suspension component of claim 1, wherein the chip comprises an external surface configured to increase heat dissipation from the chip.

15 22. The head suspension or head suspension component of claim 21, wherein the configuration of the external surface increases an external surface area of the chip.

23. The head suspension or head suspension component of claim 1, wherein the chip comprises structure configured for attachment to a head suspension component.

20 24. The head suspension or head suspension component of claim 23, wherein the structure is internally formed.

25 25. The head suspension or head suspension component of claim 24, wherein the internally formed structure comprises at least one of holes, slots, depressions, indentations and grooves.

26. The head suspension or head suspension component of claim 23, wherein the structure is externally protruding.

27. The head suspension or head suspension component of claim 26, wherein the externally protruding structure comprises at least one of tabs, rails, rods, posts, knobs, loops and resonance whiskers.

5 28. The head suspension or head suspension component of claim 1, wherein the chip is welded to a head suspension component.

29. The head suspension or head suspension component of claim 1, wherein the chip is adhered to a head suspension component.

10 30. The head suspension or head suspension component of claim 1, wherein the chip is mechanically fastened to a head suspension component.

31. The head suspension or head suspension component of claim 1, further comprising a MEMS device and wherein the chip is coupled to the MEMS device.

15 32. The head suspension or head suspension component of claim 1, wherein the chip comprises a head lift component.

33. The head suspension or head suspension component of claim 32, wherein the head lift component is integrally formed from the chip.

34. The head suspension or head suspension component of claim 32, wherein the head lift component is attached to the chip.

20 35. A method of making a head suspension or head suspension component for use in supporting a read/write head in a storage device, the method comprising the steps of:

providing a head suspension or head suspension component;
and

mounting an integrated circuit chip as a structural element
of the head suspension or head suspension component.

36. The method of claim 35, further comprising the step of
electrically connecting the chip to control electronics for the read/write head.

5 37. The method of claim 35, further comprising the step of
electrically connecting the chip to the read/write head.

38. The method of claim 35, wherein the head suspension
comprises a load beam, and wherein the step of mounting comprises the step of
coupling the chip to the load beam.

10 39. The method of claim 38, wherein the load beam further
comprises first and second portions, and wherein the step of coupling comprises
coupling the chip between the first and second portions of the load beam.

40. The method of claim 35, further comprising the step of
configuring an integrated circuit chip for enhanced performance of the head
15 suspension or head suspension component prior to mounting the chip.